

DG 1145 – Section C.I.12

Radiation Protection



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Overview

- Section rationale and basis.
- Section references.
- Content highlights.
- Referencing a certified design.
- Coordination with SRP update.
- Breakout group.

ML060230011

Rationale and Basis

- Rationale:
 - Provide guidance for 10 CFR Part 52 applicants.
- Technical basis:
 - Regulatory Guide 1.70.
 - Standard Review Plan (NUREG-0800).
 - NEI 04-01E input (benefit from intensive work completed on § 12.5).

References

- 10 CFR Parts 19, 20, 30, 40, 50, 52, 70 and 71.
- Regulatory Guides.
- NUREGs.
- ANSI standards.

Content Highlights

- Incorporation of operational program implementation milestones (SECY-05-0197).
- Higher level of detail in Operational Radiation Protection Program description (§ 12.5).

10 CFR 20.1406

Applicants for licenses, other than renewals, after August 20, 1997, shall describe in the application how facility design and procedures for operation will minimize, to the extent practicable, contamination of the facility and the environment, facilitate eventual decommissioning, and minimize, to the extent practicable, the generation of radioactive waste.

Referencing a Certified Design

In the case of a COL application referencing a certified design, which areas will be reviewed by the NRC staff?

§ 12.1 – ALARA

- Policy considerations:
 - Management policy on ALARA.
 - Applicable responsibilities and related activities of management. *
 - ALARA policies relating to plant operations.
 - Implementation of policy, organization, training and design review guidance (RGs 1.8, 8.8 and 8.10). *
 - Incorporation and use of experience from past designs and operating plants.

** COL Action Item*

§ 12.1 – ALARA

- Design considerations:
 - ALARA design guidance and training, including both initial plant design and future design reviews.
 - 10 CFR 20.1406 requirements with respect to design approaches.
 - ALARA design considerations for decommissioning.

§ 12.1 – ALARA

- Operational considerations:
 - Descriptions of operational considerations, in accordance with DG-1145 guidance. *
 - Incorporation of operating plant experience.
 - Measures for planning and accomplishing work, including interfaces between radiation protection, operations, maintenance, ...
 - Guidance of RGs 8.2, 8.7, 8.9, ..., 8.38. *

§ 12.2 – Radiation Sources

■ Contained Sources:

- Descriptions of required radiation sources that may warrant shielding design consideration.
- Description of any radiation source not identified in § 12.2.1 of the referenced plant design. *
- Updated source term information, as necessary.

§ 12.3 – Radiation Protection Design Features

- Facility Design Features:
 - Descriptions of each very high radiation area, including its location on plant layout diagrams.
 - Locate and describe all sources listed in § 12.2 on layout drawings.
 - Indicate on layout drawings locations of area, airborne radioactivity, and portal radiation monitors.

§ 12.3 – Radiation Protection

Design Features

- Shielding:
 - Describe features to preclude radiation streaming in containment during refueling (BWR only).
 - Address administrative controls for access to very high radiation areas. *
- Area Radiation and Airborne Radioactivity Monitoring Instrumentation
 - Address methods for obtaining representative in-plant airborne radioactivity concentrations from work areas. *
 - Address use of portable instruments to determine airborne iodine concentrations in plant areas following an accident. *

§ 12.3 – Radiation Protection Design Features

- Dose Assessment
 - For multi-unit plants, provide estimated annual doses to construction workers.

§ 12.5 – Operational Radiation Protection Program

■ Organization:

- Describe administrative organization of the radiation protection program, including responsibility of each position. *
- Describe experience and qualification of personnel responsible for the radiation protection program.
- Describe personnel responsible for implementing and documenting radiation protection program reviews (10 CFR 20.1101 and 20.2102).

§ 12.5 – Operational Radiation Protection Program

- Equipment, Instrumentation, and Facilities
 - Provide criteria for selecting portable and laboratory technical equipment and instrumentation.
 - Describe and identify the location of those radiation protection facilities not previously described.
 - Guidance of RGs 1.97, 8.4, 8.6, ..., 8.28.

§ 12.5 – Operational Radiation Protection Program

- Procedures:
 - Describe radiation protection program procedures in the following areas: *
 - Radiological surveillance
 - Access control
 - Radiation work permits
 - Contamination control
 - Personnel monitoring and dose control
 - Respiratory protection
 - Radioactive material control
 - Posting and labeling
 - Radiation protection training
 - Quality assurance.

§ 12.5 – Operational Radiation Protection Program

- Procedures:
 - 10 CFR 20.1406 requirements with respect to procedures for operation.
 - Guidance of Regulatory Guides 1.8, 8.2, 8.7, 8.8 and 8.10 and the applicable portions of NUREG-1736.

SRP Update Effort

Input from the 2005
public meetings with
NEI.

Significant revision by
staff.



Draft of SRP § 12.5 available on NRC webpage.

SRP and COL RG efforts work in tandem.

Breakout Group



Questions/comments regarding Section C.I.12 ?